

## DISSIMILAR DOUBLE TRIODE

FOR TV VERTICAL-DEFLECTION OSCILLATOR AND AMPLIFIER APPLICATIONS

### DESCRIPTION AND RATING

The 6FJ7 is a COMPACTRON device containing two dissimilar triode sections, designed for use as a combined vertical-deflection oscillator and amplifier in television receivers. Section 1 is intended for service as an oscillator and Section 2 as an amplifier.

#### GENERAL

##### ELECTRICAL

Cathode—Coated Unipotential

Heater Characteristics and Ratings (Design-Maximum Rating System)

Heater Voltage, AC or DC\*..... $6.3 \pm 0.6$

Heater Current†.....0.9

Direct Interelectrode Capacitances, approximate‡

Volts  
Ampere

|                              | Section 1 | Section 2 |    |
|------------------------------|-----------|-----------|----|
| Grid to Plate: (g to p)..... | 3.8       | 5.0       | pf |
| Input: g to (h+k).....       | 2.2       | 4.0       | pf |
| Output: p to (h+k).....      | 0.48      | 0.54      | pf |

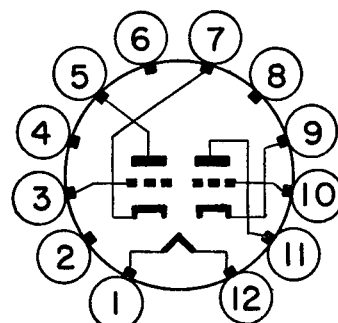
##### MECHANICAL

Mounting Position—Any

Envelope—T-9, Glass

Base—E12-70, Button 12-Pin

#### BASING DIAGRAM

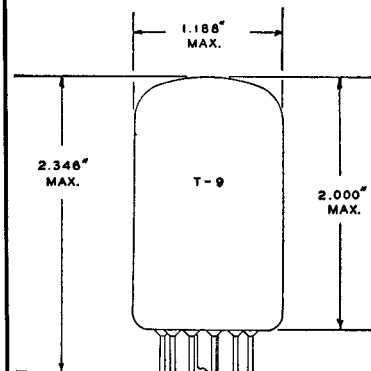


EIA 12BM

#### TERMINAL CONNECTIONS

- Pin 1—Heater
- Pin 2—No Connection
- Pin 3—Grid (Section 2)
- Pin 4—No Connection
- Pin 5—Plate (Section 2)
- Pin 6—Internal Connection—Do Not Use
- Pin 7—Cathode (Section 2)
- Pin 8—No Connection
- Pin 9—Cathode (Section 1)
- Pin 10—Grid (Section 1)
- Pin 11—Plate (Section 1)
- Pin 12—Heater

#### PHYSICAL DIMENSIONS



The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

## MAXIMUM RATINGS

### DESIGN-MAXIMUM VALUES

|                                         | Vertical<br>Oscillator<br>Service§<br>(Section 1) | Vertical<br>Deflection<br>Amplifier§<br>(Section 2) |              |
|-----------------------------------------|---------------------------------------------------|-----------------------------------------------------|--------------|
| DC Plate Voltage.....                   | 350                                               | 550                                                 | Volts        |
| Peak Positive Pulse Plate Voltage.....  | —                                                 | 2500                                                | Volts        |
| Peak Negative Grid Voltage.....         | 400                                               | 250                                                 | Volts        |
| Plate Dissipation.....                  | 1.0                                               | 10¶                                                 | Watts        |
| DC Cathode Current.....                 | —                                                 | 50                                                  | Milliamperes |
| Peak Cathode Current.....               | —                                                 | 150                                                 | Milliamperes |
| Heater-Cathode Voltage                  |                                                   |                                                     |              |
| Heater Positive with Respect to Cathode |                                                   |                                                     |              |
| DC Component.....                       | 100                                               | 100                                                 | Volts        |
| Total DC and Peak.....                  | 200                                               | 200                                                 | Volts        |
| Heater Negative with Respect to Cathode |                                                   |                                                     |              |
| Total DC and Peak.....                  | 200                                               | 200                                                 | Volts        |
| Grid Circuit Resistance                 |                                                   |                                                     |              |
| With Fixed Bias.....                    | 2.2                                               | 2.2                                                 | Megohms      |
| With Cathode Bias.....                  | 2.2                                               | —                                                   | Megohms      |

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions. The tube manufacturer chooses these values to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, variation in characteristics of all other tubes in the equipment, equipment control adjustment, load variation, signal variation, and environmental conditions.

## CHARACTERISTICS AND TYPICAL OPERATION

### AVERAGE CHARACTERISTICS

|                                    | Section 1<br>(Oscillator) | Section 2<br>(Amplifier) |              |
|------------------------------------|---------------------------|--------------------------|--------------|
| Plate Voltage.....                 | 250                       | 150    250               | Volts        |
| Grid Voltage.....                  | -8.0                      | 0 #   -9.5               | Volts        |
| Amplification Factor.....          | 22.5                      | —    15.4                |              |
| Plate Resistance, approximate..... | 9000                      | —    2000                | Ohms         |
| Transconductance.....              | 2500                      | —    7700                | Micromhos    |
| Plate Current.....                 | 8.0                       | 68    41                 | Milliamperes |
| Grid Voltage, approximate          |                           |                          |              |
| Ib = 10 Microamperes.....          | -18                       | —    —                   | Volts        |
| Grid Voltage, approximate          |                           |                          |              |
| Ib = 50 Microamperes.....          | —                         | —    -23                 | Volts        |

\* The equipment designer shall design the equipment so that the heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

† Heater current at bogey heater voltage.

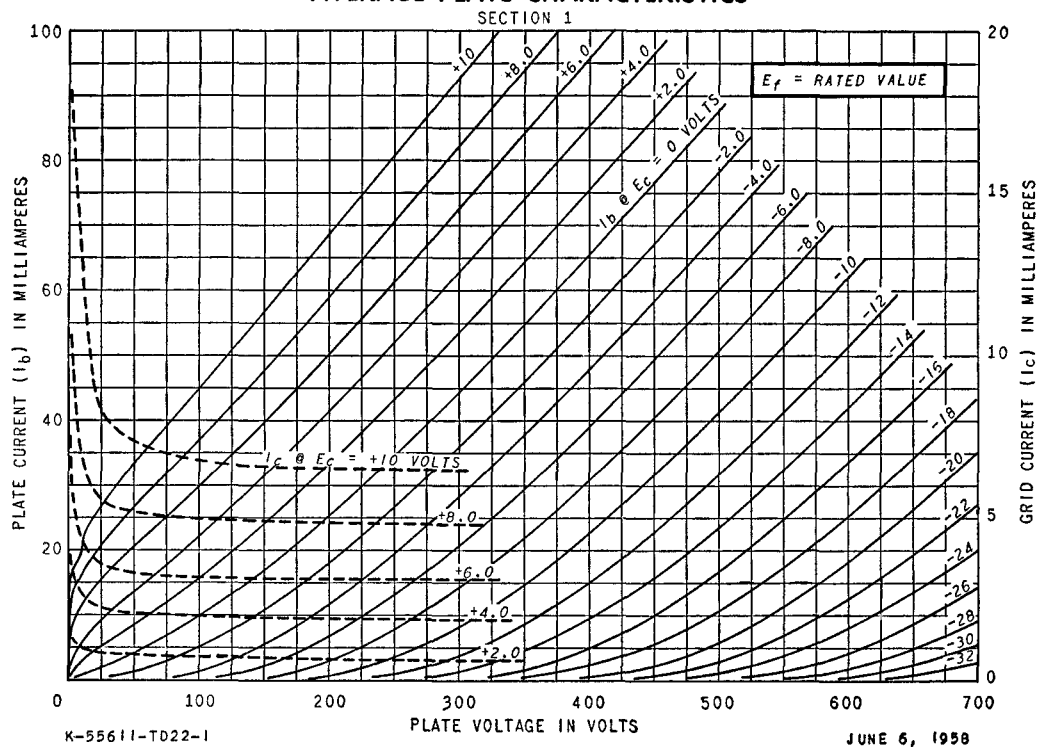
‡ Without external shield.

§ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

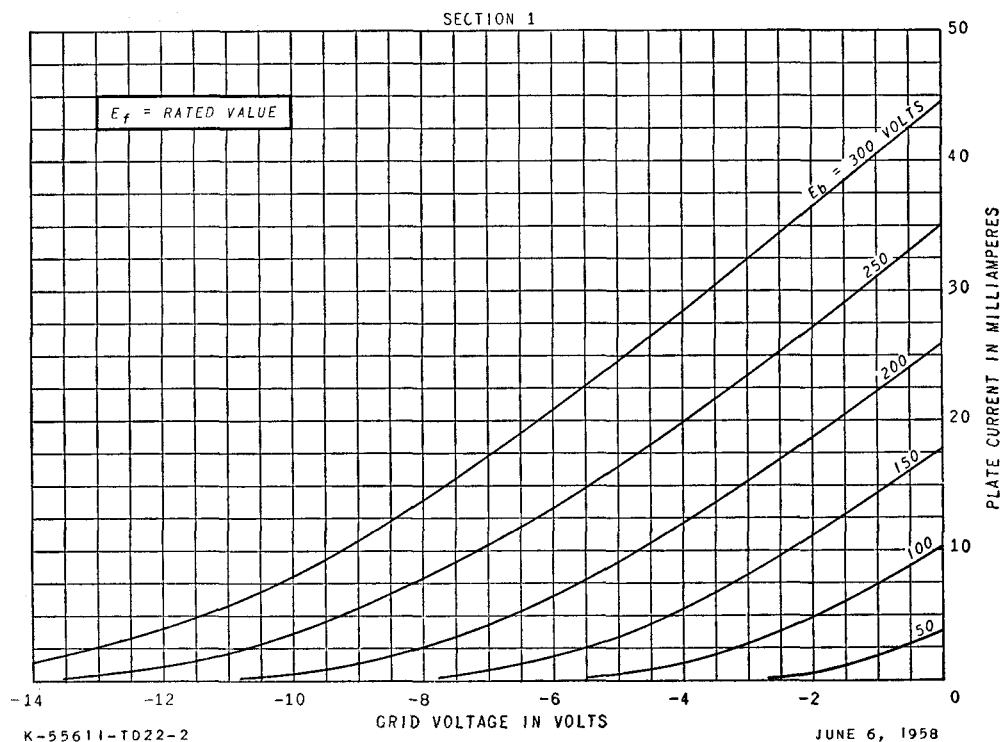
¶ In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the device in the absence of excitation.

# Applied for short interval (two seconds maximum) so as not to damage device.

# **AVERAGE PLATE CHARACTERISTICS**

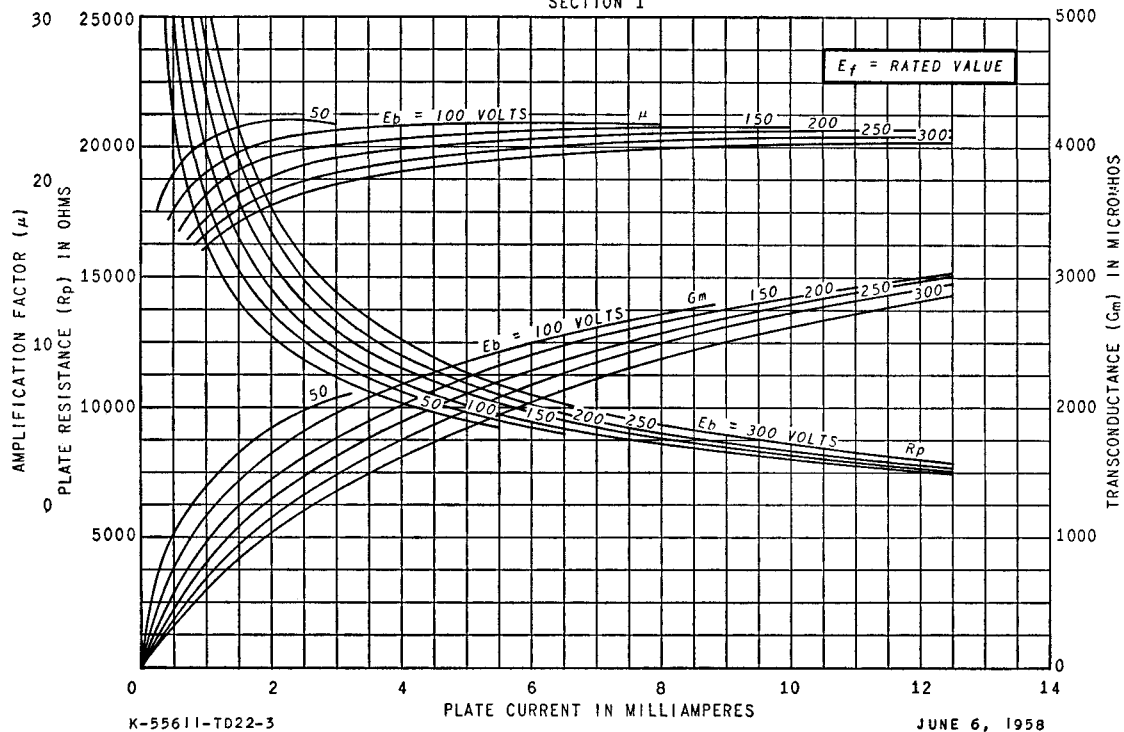


# **AVERAGE TRANSFER CHARACTERISTICS**



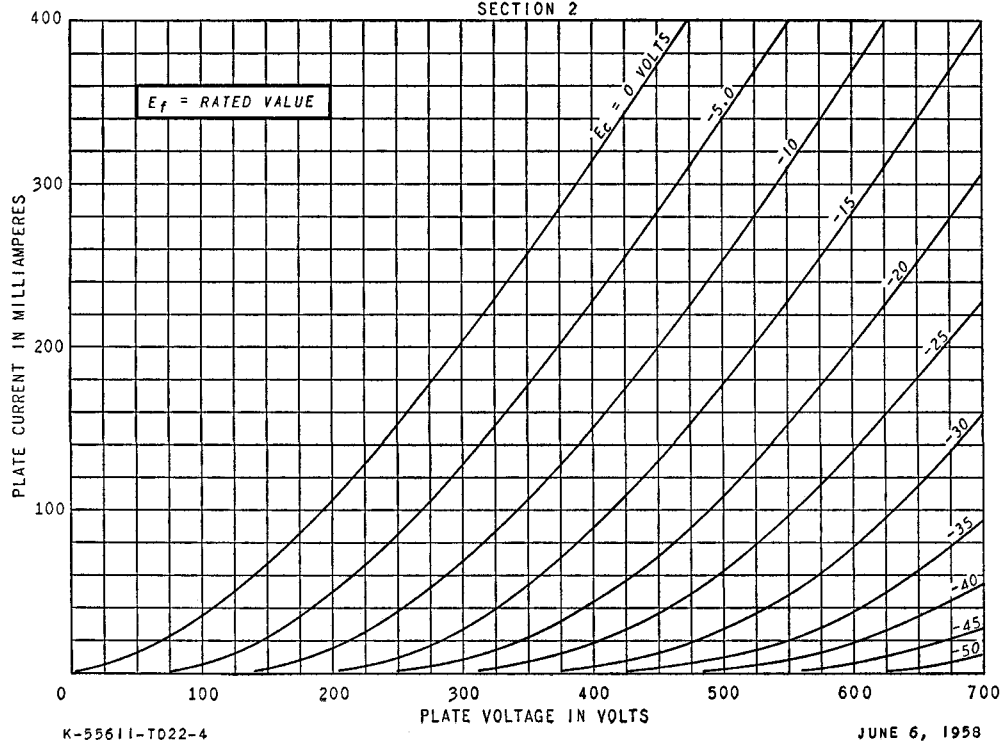
## AVERAGE CHARACTERISTICS

SECTION 1



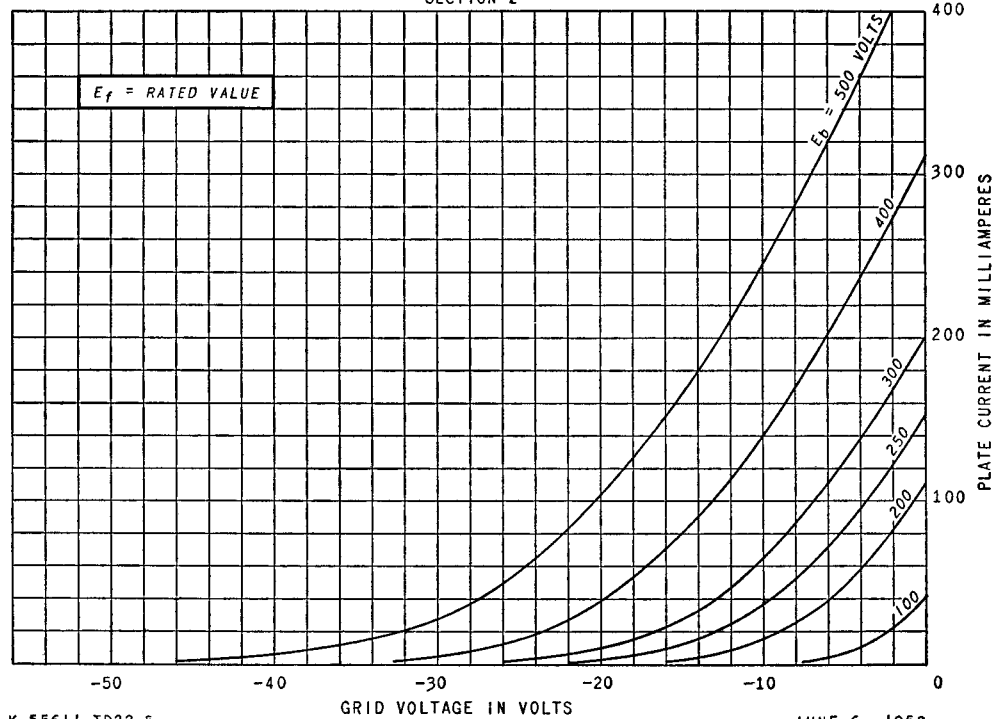
## AVERAGE PLATE CHARACTERISTICS

SECTION 2



## AVERAGE TRANSFER CHARACTERISTICS

SECTION 2



## AVERAGE CHARACTERISTICS

SECTION 2

